

SEQUENCE LISTING

<110> Steward, Lance E.
Fernandez-Salas, Ester
Aoki, Kei Roger

<120> Fret Protease Assays For Clostridial
Toxins

<130> P-AR 4802

<160> 96

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic construct

<400> 1

Glu Ala Asn Gln Arg Ala Thr Lys
1 5

<210> 2

<211> 206

<212> PRT

<213> Homo sapiens

<400> 2

Met	Ala	Glu	Asp	Ala	Asp	Met	Arg	Asn	Glu	Leu	Glu	Glu	Met	Gln	Arg
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		20					25					30			
Leu	Gln	Leu	Val	Glu	Glu	Ser	Lys	Asp	Ala	Gly	Ile	Arg	Thr	Leu	Val
		35					40					45			
Met	Leu	Asp	Glu	Gln	Gly	Glu	Gln	Leu	Glu	Arg	Ile	Glu	Glu	Gly	Met
	50					55				60					
Asp	Gln	Ile	Asn	Lys	Asp	Met	Lys	Glu	Ala	Glu	Lys	Asn	Leu	Thr	Asp
65				70				75				80			
Leu	Gly	Lys	Phe	Cys	Gly	Leu	Cys	Val	Cys	Pro	Cys	Asn	Lys	Leu	Lys
			85					90				95			
Ser	Ser	Asp	Ala	Tyr	Lys	Lys	Ala	Trp	Gly	Asn	Asn	Gln	Asp	Gly	Val
			100					105				110			
Val	Ala	Ser	Gln	Pro	Ala	Arg	Val	Val	Asp	Glu	Arg	Glu	Gln	Met	Ala
			115				120					125			

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Ile	Ser	Gly	Gly	Phe	Ile	Arg	Arg	Val	Thr	Asn	Asp	Ala	Arg	Glu	Asn
130						135					140				
Glu	Met	Asp	Glu	Asn	Leu	Glu	Gln	Val	Ser	Gly	Ile	Ile	Gly	Asn	Leu
145					150					155					160
Arg	His	Met	Ala	Leu	Asp	Met	Gly	Asn	Glu	Ile	Asp	Thr	Gln	Asn	Arg
				165					170					175	
Gln	Ile	Asp	Arg	Ile	Met	Glu	Lys	Ala	Asp	Ser	Asn	Lys	Thr	Arg	Ile
			180					185					190		
Asp	Glu	Ala	Asn	Gln	Arg	Ala	Thr	Lys	Met	Leu	Gly	Ser	Gly		
		195					200						205		

<210> 3
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 <213> Artificial Sequence

<220>
 <223> synthetic construct

<400> 3
 Gly Ala Ser Gln Phe Glu Thr Ser
 1 5

<210> 4
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 4
 Met Ser Ala Thr Ala Ala Thr Ala Pro Pro Ala Ala Pro Ala Gly Glu
 1 5 10 15
 Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu
 20 25 30
 Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val
 35 40 45
 Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp
 50 55 60
 Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser
 65 70 75 80
 Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Lys Met Met
 85 90 95
 Ile Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val
 100 105 110
 Tyr Phe Ser Ser
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<210> 5
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<212> PRT
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<220>
<223> synthetic construct

<400> 5
Asp Thr Lys Lys Ala Val Lys Trp
1 5

<210> 6
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<213> Artificial Sequence

<220>
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<400> 6
Arg Asp Gln Lys Leu Ser Glu Leu
1 5

<210> 7
<211> 206
<212> PRT
<213> Rattus sp.

<400> 7
Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg
1 5 10 15
Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met
20 25 30
Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val
35 40 45
Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met
50 55 60
Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp
65 70 75 80
Leu Gly Lys Phe Cys Gly Leu Cys Val Cys Pro Cys Asn Lys Leu Lys
85 90 95
Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val
100 105 110
Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala
115 120 125
Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn
130 135 140
Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu

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145		150		155		160									
Arg	His	Met	Ala	Leu	Asp	Met	Gly	Asn	Glu	Ile	Asp	Thr	Gln	Asn	Arg
			165				170						175		
Gln	Ile	Asp	Arg	Ile	Met	Glu	Lys	Ala	Asp	Ser	Asn	Lys	Thr	Arg	Ile
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Asp	Glu	Ala	Asn	Gln	Arg	Ala	Thr	Lys	Met	Leu	Gly	Ser	Gly		
		195					200						205		

<210> 8
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<220>
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<400> 8
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 1 5

<210> 9
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<400> 9
 Glu Arg Asp Gln Lys Leu Ser Glu
 1 5

<210> 10
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<400> 10
 Glu Thr Ser Ala Ala Lys Leu Lys
 1 5

TCB280" 35024660

<210> 11
 <211> 8
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<400> 11
 Gly Ala Ser Gln Phe Glu Thr Ser
 1 5

<210> 12
 <211> 206
 <212> PRT
 <213> Mus musculus

<400> 12
 Met Ala Glu Asp Ala Asp Met Arg Asn Glu Leu Glu Glu Met Gln Arg
 1 5 10 15
 Arg Ala Asp Gln Leu Ala Asp Glu Ser Leu Glu Ser Thr Arg Arg Met
 20 25 30
 Leu Gln Leu Val Glu Glu Ser Lys Asp Ala Gly Ile Arg Thr Leu Val
 35 40 45
 Met Leu Asp Glu Gln Gly Glu Gln Leu Glu Arg Ile Glu Glu Gly Met
 50 55 60
 Asp Gln Ile Asn Lys Asp Met Lys Glu Ala Glu Lys Asn Leu Thr Asp
 65 70 75 80
 Leu Gly Lys Phe Cys Gly Leu Cys Val Cys Pro Cys Asn Lys Leu Lys
 85 90 95
 Ser Ser Asp Ala Tyr Lys Lys Ala Trp Gly Asn Asn Gln Asp Gly Val
 100 105 110
 Val Ala Ser Gln Pro Ala Arg Val Val Asp Glu Arg Glu Gln Met Ala
 115 120 125
 Ile Ser Gly Gly Phe Ile Arg Arg Val Thr Asn Asp Ala Arg Glu Asn
 130 135 140
 Glu Met Asp Glu Asn Leu Glu Gln Val Ser Gly Ile Ile Gly Asn Leu
 145 150 155 160
 Arg His Met Ala Leu Asp Met Gly Asn Glu Ile Asp Thr Gln Asn Arg
 165 170 175
 Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys Thr Arg Ile
 180 185 190
 Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser Gly
 195 200 205

<210> 13
 <211> 212
 <212> PRT
 <213> Drosophila sp.

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[illegible]

<213> Carassius auratus

Met	Ala	Asp	Glu	Ala	Asp	Met	Arg	Asn	Glu	Leu	Thr	Asp	Met	Gln	Ala
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Arg	Ala	Asp	Gln	Leu	Gly	Asp	Glu	Ser	Leu	Glu	Ser	Thr	Arg	Arg	Met
			20					25					30		
Leu	Gln	Leu	Val	Glu	Glu	Ser	Lys	Asp	Ala	Gly	Ile	Arg	Thr	Leu	Val
		35					40					45			
Met	Leu	Asp	Glu	Gln	Gly	Glu	Gln	Leu	Glu	Arg	Ile	Glu	Glu	Gly	Met
	50					55				60					
Asp	Gln	Ile	Asn	Lys	Asp	Met	Lys	Glu	Ala	Glu	Lys	Asn	Leu	Thr	Asp
65				70						75				80	
Leu	Gly	Asn	Leu	Cys	Gly	Leu	Cys	Pro	Cys	Pro	Cys	Asn	Lys	Leu	Lys
			85						90					95	
Gly	Gly	Gly	Gln	Ser	Trp	Gly	Asn	Asn	Gln	Asp	Gly	Val	Val	Ser	Ser
			100					105					110		
Gln	Pro	Ala	Arg	Val	Val	Asp	Glu	Arg	Glu	Gln	Met	Ala	Ile	Ser	Gly
		115					120					125			

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<210> 15
<211> 212
<212> PRT
<213> Strongylocentrotus purpuratus
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<210> 16
<211> 249
<212> PRT
<213> Gallus gallus
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<400> 16

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1				5					10					15	
Arg	Ala	Asp	Gln	Leu	Ala	Asp	Glu	Ser	Leu	Glu	Ser	Thr	Arg	Arg	Met
		20						25					30		
Leu	Gln	Leu	Val	Glu	Glu	Ser	Lys	Asp	Ala	Gly	Ile	Arg	Thr	Leu	Val
		35					40					45			
Met	Leu	Asp	Glu	Gln	Gly	Glu	Gln	Leu	Asp	Arg	Val	Glu	Glu	Gly	Met
	50					55					60				
Asn	His	Ile	Asn	Gln	Asp	Met	Lys	Glu	Ala	Glu	Lys	Asn	Leu	Lys	Asp
65					70					75					80
Leu	Gly	Lys	Cys	Cys	Gly	Leu	Phe	Ile	Cys	Pro	Cys	Asn	Lys	Leu	Lys
			85						90					95	
Ser	Ser	Asp	Ala	Tyr	Lys	Lys	Ala	Trp	Gly	Asn	Asn	Gln	Asp	Gly	Val
			100					105					110		
Val	Ala	Ser	Gln	Pro	Ala	Arg	Val	Val	Asp	Glu	Arg	Glu	Gln	Met	Ala
		115					120						125		
Ile	Ser	Gly	Gly	Phe	Ile	Arg	Arg	Val	Thr	Asn	Asp	Ala	Arg	Glu	Asn
	130					135					140				
Glu	Met	Asp	Glu	Asn	Leu	Glu	Gln	Val	Ser	Gly	Ile	Ile	Gly	Asn	Leu
145					150					155					160
Arg	His	Met	Ala	Leu	Asp	Met	Gly	Asn	Glu	Ile	Asp	Thr	Gln	Asn	Arg
			165					170						175	
Gln	Ile	Asp	Arg	Ile	Met	Glu	Lys	Leu	Ile	Pro	Ile	Lys	Pro	Gly	Leu
		180					185						190		
Met	Lys	Pro	Thr	Ser	Val	Gln	Gln	Arg	Cys	Ser	Ala	Val	Val	Lys	Cys
	195					200						205			
Ser	Lys	Val	His	Phe	Leu	Leu	Met	Leu	Ser	Gln	Arg	Ala	Val	Pro	Ser
	210				215					220					
Cys	Phe	Tyr	His	Gly	Ile	Tyr	Leu	Leu	Gly	Leu	His	Thr	Cys	Thr	Tyr
225					230				235						240
Gln	Pro	His	Cys	Lys	Cys	Cys	Pro	Val							
				245											

<210> 17

<211> 116

<212> PRT

<213> Mus musculus

<400> 17

Met	Ser	Ala	Thr	Ala	Ala	Thr	Val	Pro	Pro	Ala	Ala	Pro	Ala	Gly	Glu
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Gly	Gly	Pro	Pro	Ala	Pro	Pro	Pro	Asn	Leu	Thr	Ser	Asn	Arg	Arg	Leu
		20						25					30		
Gln	Gln	Thr	Gln	Ala	Gln	Val	Asp	Glu	Val	Val	Asp	Ile	Met	Arg	Val
		35					40					45			
Asn	Val	Asp	Lys	Val	Leu	Glu	Arg	Asp	Gln	Lys	Leu	Ser	Glu	Leu	Asp
	50					55					60				
Asp	Arg	Ala	Asp	Ala	Leu	Gln	Ala	Gly	Ala	Ser	Gln	Phe	Glu	Thr	Ser
65					70					75					80
Ala	Ala	Lys	Leu	Lys	Arg	Lys	Tyr	Trp	Trp	Lys	Asn	Leu	Lys	Met	Met
				85					90					95	

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Ile Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val
100 105 110
Tyr Phe Ser Thr
115

<210> 18
<211> 116
<212> PRT
<213> Bos taurus

<400> 18
Met Ser Ala Thr Ala Ala Thr Ala Pro Pro Ala Ala Pro Ala Gly Glu
1 5 10 15
Gly Gly Pro Pro Ala Pro Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu
20 25 30
Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val
35 40 45
Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp
50 55 60
Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser
65 70 75 80
Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Leu Lys Met Met
85 90 95
Ile Ile Leu Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val
100 105 110
Tyr Phe Ser Ser
115

<210> 19
<211> 114
<212> PRT
<213> Xenopus laevis

<400> 19
Met Ser Ala Pro Ala Ala Gly Pro Pro Ala Ala Ala Pro Gly Asp Gly
1 5 10 15
Ala Pro Gln Gly Pro Pro Asn Leu Thr Ser Asn Arg Arg Leu Gln Gln
20 25 30
Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val Asn Val
35 40 45
Asp Lys Val Leu Glu Arg Asp Thr Lys Leu Ser Glu Leu Asp Asp Arg
50 55 60
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala
65 70 75 80
Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Met Lys Met Met Ile Ile
85 90 95
Met Gly Val Ile Cys Ala Ile Ile Leu Ile Ile Ile Ile Val Tyr Phe
100 105 110
Ser Thr

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<210> 20
 <211> 104
 <212> PRT
 <213> Strongylocentrotus purpuratus

<400> 20
 Met Ala Ala Pro Pro Pro Pro Gln Pro Ala Pro Ser Asn Lys Arg Leu
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 Gln Gln Thr Gln Ala Gln Val Asp Glu Val Val Asp Ile Met Arg Val
 20 25 30
 Asn Val Asp Lys Val Leu Glu Arg Asp Gln Ala Leu Ser Val Leu Asp
 35 40 45
 Asp Arg Ala Asp Ala Leu Gln Gln Gly Ala Ser Gln Phe Glu Thr Asn
 50 55 60
 Ala Gly Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys Met Met
 65 70 75 80
 Ile Ile Leu Ala Ile Ile Ile Ile Val Ile Leu Ile Ile Ile Ile Val
 85 90 95
 Ala Ile Val Gln Ser Gln Lys Lys
 100

<210> 21
 <211> 288
 <212> PRT
 <213> Homo sapiens

<400> 21
 Met Lys Asp Arg Thr Gln Glu Leu Arg Thr Ala Lys Asp Ser Asp Asp
 1 5 10 15
 Asp Asp Asp Val Ala Val Thr Val Asp Arg Asp Arg Phe Met Asp Glu
 20 25 30
 Phe Phe Glu Gln Val Glu Glu Ile Arg Gly Phe Ile Asp Lys Ile Ala
 35 40 45
 Glu Asn Val Glu Glu Val Lys Arg Lys His Ser Ala Ile Leu Ala Ser
 50 55 60
 Pro Asn Pro Asp Glu Lys Thr Lys Glu Glu Leu Glu Glu Leu Met Ser
 65 70 75 80
 Asp Ile Lys Lys Thr Ala Asn Lys Val Arg Ser Lys Leu Lys Ser Ile
 85 90 95
 Glu Gln Ser Ile Glu Gln Glu Glu Gly Leu Asn Arg Ser Ser Ala Asp
 100 105 110
 Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg Lys Phe Val
 115 120 125
 Glu Val Met Ser Glu Tyr Asn Ala Thr Gln Ser Asp Tyr Arg Glu Arg
 130 135 140
 Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly Arg Thr Thr
 145 150 155 160
 Thr Ser Glu Glu Leu Glu Asp Met Leu Glu Ser Gly Asn Pro Ala Ile
 165 170 175
 Phe Ala Ser Gly Ile Ile Met Asp Ser Ser Ile Ser Lys Gln Ala Leu
 180 185 190

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Ser	Glu	Ile	Glu	Thr	Arg	His	Ser	Glu	Ile	Ile	Lys	Leu	Glu	Asn	Ser
		195					200					205			
Ile	Arg	Glu	Leu	His	Asp	Met	Phe	Met	Asp	Met	Ala	Met	Leu	Val	Glu
	210					215					220				
Ser	Gln	Gly	Glu	Met	Ile	Asp	Arg	Ile	Glu	Tyr	Asn	Val	Glu	His	Ala
225					230					235					240
Val	Asp	Tyr	Val	Glu	Arg	Ala	Val	Ser	Asp	Thr	Lys	Lys	Ala	Val	Lys
				245					250					255	
Tyr	Gln	Ser	Lys	Ala	Arg	Arg	Lys	Lys	Ile	Met	Ile	Ile	Ile	Cys	Cys
			260					265					270		
Val	Ile	Leu	Gly	Ile	Val	Ile	Ala	Ser	Thr	Val	Gly	Gly	Ile	Phe	Ala
		275					280					285			

<210> 22
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 <213> Homo sapiens

<400> 22

Met	Lys	Asp	Arg	Thr	Gln	Glu	Leu	Arg	Ser	Ala	Lys	Asp	Ser	Asp	Asp
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Glu	Glu	Glu	Val	Val	His	Val	Asp	Arg	Asp	His	Phe	Met	Asp	Glu	Phe
			20					25					30		
Phe	Glu	Gln	Val	Glu	Glu	Ile	Arg	Gly	Cys	Ile	Glu	Lys	Leu	Ser	Glu
		35					40					45			
Asp	Val	Glu	Gln	Val	Lys	Lys	Gln	His	Ser	Ala	Ile	Leu	Ala	Ala	Pro
	50					55					60				
Asn	Pro	Asp	Glu	Lys	Thr	Lys	Gln	Glu	Leu	Glu	Asp	Leu	Thr	Ala	Asp
65					70				75					80	
Ile	Lys	Lys	Thr	Ala	Asn	Lys	Val	Arg	Ser	Lys	Leu	Lys	Ala	Ile	Glu
				85				90						95	
Gln	Ser	Ile	Glu	Gln	Glu	Glu	Gly	Leu	Asn	Arg	Ser	Ser	Ala	Asp	Leu
			100				105						110		
Arg	Ile	Arg	Lys	Thr	Gln	His	Ser	Thr	Leu	Ser	Arg	Lys	Phe	Val	Glu
		115					120					125			
Val	Met	Thr	Glu	Tyr	Asn	Ala	Thr	Gln	Ser	Lys	Tyr	Arg	Asp	Arg	Cys
	130					135					140				
Lys	Asp	Arg	Ile	Gln	Arg	Gln	Leu	Glu	Ile	Thr	Gly	Arg	Thr	Thr	Thr
145					150					155					160
Asn	Glu	Glu	Leu	Glu	Asp	Met	Leu	Glu	Ser	Gly	Lys	Leu	Ala	Ile	Phe
			165						170					175	
Thr	Asp	Asp	Ile	Lys	Met	Asp	Ser	Gln	Met	Thr	Lys	Gln	Ala	Leu	Asn
			180					185					190		
Glu	Ile	Glu	Thr	Arg	His	Asn	Glu	Ile	Ile	Lys	Leu	Glu	Thr	Ser	Ile
		195					200					205			
Arg	Glu	Leu	His	Asp	Met	Phe	Val	Asp	Met	Ala	Met	Leu	Val	Glu	Ser
	210					215					220				
Gln	Gly	Glu	Met	Ile	Asp	Arg	Ile	Glu	Tyr	Asn	Val	Glu	His	Ser	Val
225					230					235					240
Asp	Tyr	Val	Glu	Arg	Ala	Val	Ser	Asp	Thr	Lys	Lys	Ala	Val	Lys	Tyr
				245					250					255	
Gln	Ser	Lys	Ala	Arg	Arg	Lys	Lys	Ile	Met	Ile	Ile	Ile	Cys	Cys	Val

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	260		265		270
Val	Leu Gly Val Val Leu Ala	Ser Ser Ile Gly Gly Thr	Leu Gly Leu		
	275	280	285		

<210> 23
 <211> 288
 <212> PRT
 <213> Mus musculus

<400> 23

Met	Lys	Asp	Arg	Thr	Gln	Glu	Leu	Arg	Thr	Ala	Lys	Asp	Ser	Asp	Asp
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Asp	Asp	Asp	Val	Thr	Val	Thr	Val	Asp	Arg	Asp	Arg	Phe	Met	Asp	Glu
			20					25					30		
Phe	Phe	Glu	Gln	Val	Glu	Glu	Ile	Arg	Gly	Phe	Ile	Asp	Lys	Ile	Ala
		35					40					45			
Glu	Asn	Val	Glu	Glu	Val	Lys	Arg	Lys	His	Ser	Ala	Ile	Leu	Ala	Ser
	50					55				60					
Pro	Asn	Pro	Asp	Glu	Lys	Thr	Lys	Glu	Glu	Leu	Glu	Glu	Leu	Met	Ser
65					70					75				80	
Asp	Ile	Lys	Lys	Thr	Ala	Asn	Lys	Val	Arg	Ser	Lys	Leu	Lys	Ser	Ile
				85					90					95	
Glu	Gln	Ser	Ile	Glu	Gln	Glu	Glu	Gly	Leu	Asn	Arg	Ser	Ser	Ala	Asp
			100					105					110		
Leu	Arg	Ile	Arg	Lys	Thr	Gln	His	Ser	Thr	Leu	Ser	Arg	Lys	Phe	Val
	115					120						125			
Glu	Val	Met	Ser	Glu	Tyr	Asn	Ala	Thr	Gln	Ser	Asp	Tyr	Arg	Glu	Arg
	130					135					140				
Cys	Lys	Gly	Arg	Ile	Gln	Arg	Gln	Leu	Glu	Ile	Thr	Gly	Arg	Thr	Thr
145					150					155				160	
Thr	Ser	Glu	Glu	Leu	Glu	Asp	Met	Leu	Glu	Ser	Gly	Asn	Pro	Ala	Ile
				165				170					175		
Phe	Ala	Ser	Gly	Ile	Ile	Met	Asp	Ser	Ser	Ile	Ser	Lys	Gln	Ala	Leu
			180				185						190		
Ser	Glu	Ile	Glu	Thr	Arg	His	Ser	Glu	Ile	Ile	Lys	Leu	Glu	Thr	Ser
	195					200						205			
Ile	Arg	Glu	Leu	His	Asp	Met	Phe	Met	Asp	Met	Ala	Met	Leu	Val	Glu
	210				215					220					
Ser	Gln	Gly	Glu	Met	Ile	Asp	Arg	Ile	Glu	Tyr	Asn	Val	Glu	His	Ala
225					230					235				240	
Val	Asp	Tyr	Val	Glu	Arg	Ala	Val	Ser	Asp	Thr	Lys	Lys	Ala	Val	Lys
				245					250				255		
Tyr	Gln	Ser	Lys	Ala	Arg	Arg	Lys	Lys	Ile	Met	Ile	Ile	Ile	Cys	Cys
			260				265					270			
Val	Ile	Leu	Gly	Ile	Ile	Ile	Ala	Ser	Thr	Ile	Gly	Gly	Ile	Phe	Gly
	275					280						285			

<210> 24
 <211> 291
 <212> PRT
 <213> Drosophila sp.

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<400> 24

Met Thr Lys Asp Arg Leu Ala Ala Leu His Ala Ala Gln Ser Asp Asp
 1 5 10 15
 Glu Glu Glu Thr Glu Val Ala Val Asn Val Asp Gly His Asp Ser Tyr
 20 25 30
 Met Asp Asp Phe Phe Ala Gln Val Glu Glu Ile Arg Gly Met Ile Asp
 35 40 45
 Lys Val Gln Asp Asn Val Glu Glu Val Lys Lys Lys His Ser Ala Ile
 50 55 60
 Leu Ser Ala Pro Gln Thr Asp Glu Lys Thr Lys Gln Glu Leu Glu Asp
 65 70 75 80
 Leu Met Ala Asp Ile Lys Lys Asn Ala Asn Arg Val Arg Gly Lys Leu
 85 90 95
 Lys Gly Ile Glu Gln Asn Ile Glu Gln Glu Glu Gln Gln Asn Lys Ser
 100 105 110
 Ser Ala Asp Leu Arg Ile Arg Lys Thr Gln His Ser Thr Leu Ser Arg
 115 120 125
 Lys Phe Val Glu Val Met Thr Glu Tyr Asn Arg Thr Gln Thr Asp Tyr
 130 135 140
 Arg Glu Arg Cys Lys Gly Arg Ile Gln Arg Gln Leu Glu Ile Thr Gly
 145 150 155 160
 Arg Pro Thr Asn Asp Asp Glu Leu Glu Lys Met Leu Glu Glu Gly Asn
 165 170 175
 Ser Ser Val Phe Thr Gln Gly Ile Ile Met Glu Thr Gln Gln Ala Lys
 180 185 190
 Gln Thr Leu Ala Asp Ile Glu Ala Arg His Gln Asp Ile Met Lys Leu
 195 200 205
 Glu Thr Ser Ile Lys Glu Leu His Asp Met Phe Met Asp Met Ala Met
 210 215 220
 Leu Val Glu Ser Gln Gly Glu Met Ile Asp Arg Ile Glu Tyr His Val
 225 230 235 240
 Glu His Ala Met Asp Tyr Val Gln Thr Ala Thr Gln Asp Thr Lys Lys
 245 250 255
 Ala Leu Lys Tyr Gln Ser Lys Ala Arg Arg Lys Lys Ile Met Ile Leu
 260 265 270
 Ile Cys Leu Thr Val Leu Gly Ile Leu Ala Ala Ser Tyr Val Ser Ser
 275 280 285
 Tyr Phe Met
 290

<210> 25

<211> 291

<212> PRT

<213> Caenorhabditis elegans

<400> 25

Met Thr Lys Asp Arg Leu Ser Ala Leu Lys Ala Ala Gln Ser Glu Asp
 1 5 10 15
 Glu Gln Asp Asp Asp Met His Met Asp Thr Gly Asn Ala Gln Tyr Met
 20 25 30
 Glu Glu Phe Phe Glu Gln Val Glu Glu Ile Arg Gly Ser Val Asp Ile

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<210> 26
<211> 288
<212> PRT
<213> Strongylocentrotus purpuratus
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Met	Arg	Asp	Arg	Leu	Gly	Ser	Leu	Lys	Arg	Asn	Glu	Glu	Asp	Asp	Val
1				5					10					15	
Gly	Pro	Glu	Val	Ala	Val	Asn	Val	Glu	Ser	Glu	Lys	Phe	Met	Glu	Glu
			20					25					30		
Phe	Phe	Glu	Gln	Val	Glu	Glu	Val	Arg	Asn	Asn	Ile	Asp	Lys	Ile	Ser
		35					40					45			
Lys	Asn	Val	Asp	Glu	Val	Lys	Lys	Lys	His	Ser	Asp	Ile	Leu	Ser	Ala
	50					55					60				
Pro	Gln	Ala	Asp	Glu	Lys	Val	Lys	Asp	Glu	Leu	Glu	Glu	Leu	Met	Ser
65					70					75					80
Asp	Ile	Lys	Lys	Thr	Ala	Asn	Lys	Val	Arg	Ala	Lys	Leu	Lys	Met	Met
				85					90					95	

Glu	Gln	Ser	Ile	Glu	Gln	Glu	Glu	Ser	Ala	Lys	Met	Asn	Ser	Ala	Asp
			100					105					110		
Val	Arg	Ile	Arg	Lys	Thr	Gln	His	Ser	Thr	Leu	Ser	Arg	Lys	Phe	Val
		115					120					125			
Glu	Val	Met	Thr	Asp	Tyr	Asn	Ser	Thr	Gln	Thr	Asp	Tyr	Arg	Glu	Arg
		130				135					140				
Cys	Lys	Gly	Arg	Ile	Gln	Arg	Gln	Leu	Glu	Ile	Thr	Gly	Lys	Ser	Thr
145					150					155					160
Thr	Asp	Ala	Glu	Leu	Glu	Asp	Met	Leu	Glu	Ser	Gly	Asn	Pro	Ala	Ile
				165					170					175	
Phe	Thr	Ser	Gly	Ile	Ile	Met	Asp	Thr	Gln	Gln	Ala	Lys	Gln	Thr	Leu
			180					185					190		
Arg	Asp	Ile	Glu	Ala	Arg	His	Asn	Asp	Ile	Ile	Lys	Leu	Glu	Ser	Ser
		195					200					205			
Ile	Arg	Glu	Leu	His	Asp	Met	Phe	Met	Asp	Met	Ala	Met	Leu	Val	Glu
		210				215					220				
Ser	Gln	Gly	Glu	Met	Ile	Asp	Arg	Ile	Glu	Tyr	Asn	Val	Glu	Gln	Ser
225					230					235					240
Val	Asp	Tyr	Val	Glu	Thr	Ala	Lys	Met	Asp	Thr	Lys	Lys	Ala	Val	Lys
				245					250					255	
Tyr	Gln	Ser	Lys	Ala	Arg	Arg	Lys	Lys	Phe	Tyr	Ile	Ala	Ile	Cys	Cys
			260					265					270		
Gly	Val	Ala	Leu	Gly	Ile	Leu	Val	Leu	Val	Leu	Ile	Ile	Val	Leu	Ala
		275					280					285			

<210> 27
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 <212> PRT
 <213> Homo sapiens

<400> 27
 Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met
 1 5 10

<210> 28
 <211> 15
 <212> PRT
 <213> Homo sapiens

<400> 28
 Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys
 1 5 10 15

<210> 29
 <211> 16
 <212> PRT
 <213> Homo sapiens

<400> 29
 Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met

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1 5 10 15

<210> 30
<211> 17
<212> PRT
<213> Homo sapiens

<400> 30
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 31
<211> 17
<212> PRT
<213> Homo sapiens

<400> 31
Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys
1 5 10 15
Met

<210> 32
<211> 18
<212> PRT
<213> Homo sapiens

<400> 32
Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys
1 5 10 15
Met Leu

<210> 33
<211> 33
<212> PRT
<213> Mus musculus

<400> 33
Gln Asn Arg Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys
1 5 10 15
Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser
20 25 30
Gly

0942098 082801

<210> 34
<211> 32
<212> PRT
<213> Homo sapiens

<400> 34
Gln Asn Pro Gln Ile Lys Arg Ile Thr Asp Lys Ala Asp Thr Asn Arg
1 5 10 15
Asp Arg Ile Asp Ile Ala Asn Ala Arg Ala Lys Lys Leu Ile Asp Ser
20 25 30

<210> 35
<211> 32
<212> PRT
<213> Mus musculus

<400> 35
Gln Asn Gln Gln Ile Gln Lys Ile Thr Glu Lys Ala Asp Thr Asn Lys
1 5 10 15
Asn Arg Ile Asp Ile Ala Asn Thr Arg Ala Lys Lys Leu Ile Asp Ser
20 25 30

<210> 36
<211> 34
<212> PRT
<213> Gallus gallus

<400> 36
Gln Asn Arg Gln Ile Asp Arg Ile Met Glu Lys Leu Ile Pro Ile Lys
1 5 10 15
Pro Gly Leu Met Lys Pro Thr Ser Val Gln Gln Arg Cys Ser Ala Val
20 25 30
Val Lys

<210> 37
<211> 33
<212> PRT
<213> Carassius auratus

<400> 37
Gln Asn Arg Gln Ile Asp Arg Ile Met Asp Met Ala Asp Ser Asn Lys
1 5 10 15
Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser
20 25 30
Gly

<210> 38

09942098 86024660

<211> 33
<212> PRT
<213> *Carassius auratus*

<400> 38
Gln Asn Arg Gln Ile Asp Arg Ile Met Glu Lys Ala Asp Ser Asn Lys
1 5 10 15
Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly Ser
20 25 30
Gly

<210> 39
<211> 30
<212> PRT
<213> *Torpedo sp.*

<400> 39
Gln Asn Ala Gln Val Asp Arg Ile Val Val Lys Gly Asp Met Asn Lys
1 5 10 15
Ala Arg Ile Asp Glu Ala Asn Lys His Ala Thr Lys Met Leu
20 25 30

<210> 40
<211> 33
<212> PRT
<213> *Strongylocentrotus purpuratus*

<400> 40
Gln Asn Ser Gln Val Gly Arg Ile Thr Ser Lys Ala Glu Ser Asn Glu
1 5 10 15
Gly Arg Ile Asn Ser Ala Asp Lys Arg Ala Lys Asn Ile Leu Arg Asn
20 25 30
Lys

<210> 41
<211> 31
<212> PRT
<213> *Caenorhabditis elagans*

<400> 41
Gln Asn Arg Gln Leu Asp Arg Ile His Asp Lys Gln Ser Asn Glu Val
1 5 10 15
Arg Val Glu Ser Ala Asn Lys Arg Ala Lys Asn Leu Ile Thr Lys
20 25 30

<210> 42
<211> 31

094209.08801

<212> PRT

<213> Drosophila sp.

<400> 42

Gln	Asn	Arg	Gln	Ile	Asp	Arg	Ile	Asn	Arg	Lys	Gly	Glu	Ser	Asn	Glu
1				5				10						15	
Ala	Arg	Ile	Ala	Val	Ala	Asn	Gln	Arg	Ala	His	Gln	Leu	Leu	Lys	
			20					25					30		

<210> 43

<211> 32

<212> PRT

<213> Hirudinida sp.

<400> 43

Gln	Asn	Arg	Gln	Val	Asp	Arg	Ile	Asn	Asn	Lys	Met	Thr	Ser	Asn	Gln
1				5				10						15	
Leu	Arg	Ile	Ser	Asp	Ala	Asn	Lys	Arg	Ala	Ser	Lys	Leu	Leu	Lys	Glu
			20					25					30		

<210> 44

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 44

Ser	Asn	Lys	Thr	Arg	Ile	Asp	Glu	Ala	Asn	Gln	Arg	Ala	Thr	Lys	Ala
1				5				10						15	
Leu															

<210> 45

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<221> MOD_RES

<222> 16

<223> Xaa=Nle

<400> 45

Ser	Asn	Lys	Thr	Arg	Ile	Asp	Glu	Ala	Asn	Gln	Arg	Ala	Thr	Lys	Xaa
1				5				10						15	
Leu															

0944098103230" B6024650

<210> 46
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<400> 46
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Ala Met
1 5 10 15
Leu

<210> 47
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<400> 47
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Ser Lys Met
1 5 10 15
Leu

<210> 48
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 14
<223> Xaa=Abu

<400> 48
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Xaa Lys Met
1 5 10 15
Leu

<210> 49

FOR230" 85024660

<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 13
<223> Xaa=Abu

<400> 49
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Xaa Thr Lys Met
1 5 10 15
Leu

<210> 50
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<400> 50
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Ala Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 51
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 11
<223> Xaa=Abu

<400> 51
Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Xaa Ala Thr Lys Met Leu
1 5 10 15

<210> 52
<211> 17
<212> PRT

094200-08280-06024650

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 52

Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Asn Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 53

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 53

Ser Asn Lys Thr Arg Ile Asp Glu Ala Ala Gln Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 54

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<221> MOD_RES

<222> 9

<223> Xaa=Abu

<400> 54

Ser Asn Lys Thr Arg Ile Asp Glu Xaa Asn Gln Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 55

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

108230" 86024660

<400> 55

Ser Asn Lys Thr Arg Ile Asp Gln Ala Asn Gln Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 56

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> synthetic peptide

<400> 56

Ser Asn Lys Thr Arg Ile Asn Glu Ala Asn Gln Arg Ala Thr Lys Met
1 5 10 15
Leu

<210> 57

<211> 40

<212> PRT

<213> Homo sapiens

<400> 57

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg
1 5 10 15
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ser Ser Ala Ala
20 25 30
Lys Leu Lys Arg Lys Tyr Trp Trp
35 40

<210> 58

<211> 40

<212> PRT

<213> Bos taurus

<400> 58

Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg
1 5 10 15
Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala
20 25 30
Lys Leu Lys Arg Lys Tyr Trp Trp
35 40

<210> 59

<211> 40

0942093-082801

<212> PRT
<213> Rattus sp.

<400> 59

Asp	Lys	Val	Leu	Glu	Arg	Asp	Gln	Lys	Leu	Ser	Glu	Leu	Asp	Asp	Arg
1				5				10					15		
Ala	Asp	Ala	Leu	Gln	Ala	Gly	Ala	Ser	Val	Phe	Glu	Ser	Ser	Ala	Ala
			20					25					30		
Lys	Leu	Lys	Arg	Lys	Tyr	Trp	Trp								
		35				40									

<210> 60
<211> 40
<212> PRT
<213> Rattus sp.

<400> 60

Asp	Lys	Val	Leu	Glu	Arg	Asp	Gln	Lys	Leu	Ser	Glu	Leu	Asp	Asp	Arg
1				5				10					15		
Ala	Asp	Ala	Leu	Gln	Ala	Gly	Ala	Ser	Gln	Phe	Glu	Thr	Ser	Ala	Ala
			20					25					30		
Lys	Leu	Lys	Arg	Lys	Tyr	Trp	Trp								
		35				40									

<210> 61
<211> 40
<212> PRT
<213> Rattus sp.

<400> 61

Asp	Lys	Val	Leu	Glu	Arg	Asp	Gln	Lys	Leu	Ser	Glu	Leu	Asp	Asp	Arg
1				5				10					15		
Ala	Asp	Ala	Leu	Gln	Ala	Gly	Ala	Ser	Gln	Phe	Glu	Thr	Ser	Ala	Ala
			20					25					30		
Lys	Leu	Lys	Arg	Lys	Tyr	Trp	Trp								
		35				40									

<210> 62
<211> 40
<212> PRT
<213> Rattus sp.

<400> 62

Asp	Leu	Val	Ala	Gln	Arg	Gly	Glu	Arg	Leu	Glu	Leu	Leu	Ile	Asp	Lys
1				5				10					15		
Thr	Glu	Asn	Leu	Val	Asp	Ser	Ser	Val	Thr	Phe	Lys	Thr	Thr	Ser	Arg
			20					25					30		
Asn	Leu	Ala	Arg	Ala	Met	Cys	Met								
		35				40									

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<210> 63
 <211> 32
 <212> PRT
 <213> Gallus gallus

<400> 63
 Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg Ala Asp Ala Leu
 1 5 10 15
 Gln Ala Gly Ala Ser Val Phe Glu Ser Ser Ala Ala Lys Leu Lys Arg
 20 25 30

<210> 64
 <211> 32
 <212> PRT
 <213> Gallus gallus

<400> 64
 Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg Ala Asp Ala Leu
 1 5 10 15
 Gln Ala Gly Ala Ser Gln Phe Glu Thr Ser Ala Ala Lys Leu Lys Arg
 20 25 30

<210> 65
 <211> 40
 <212> PRT
 <213> Torpedo sp.

<400> 65
 Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Asp Asp Arg
 1 5 10 15
 Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ser Ser Ala Ala
 20 25 30
 Lys Leu Lys Arg Lys Tyr Trp Trp
 35 40

<210> 66
 <211> 40
 <212> PRT
 <213> Strongylocentrotus purpuratus

<400> 66
 Asp Lys Val Leu Asp Arg Asp Gly Ala Leu Ser Val Leu Asp Asp Arg
 1 5 10 15
 Ala Asp Ala Leu Gln Gln Gly Ala Ser Gln Phe Glu Thr Asn Ala Gly
 20 25 30
 Lys Leu Lys Arg Lys Tyr Trp Trp
 35 40

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<210> 67
 <211> 40
 <212> PRT
 <213> Aplysia sp.

<400> 67
 Glu Lys Val Leu Asp Arg Asp Gln Lys Ile Ser Gln Leu Asp Asp Arg
 1 5 10 15
 Ala Glu Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ala Ser Ala Gly
 20 25 30
 Lys Leu Lys Arg Lys Tyr Trp Trp
 35 40

<210> 68
 <211> 40
 <212> PRT
 <213> Teuthoida sp.

<400> 68
 Asp Lys Val Leu Glu Arg Asp Ser Lys Ile Ser Glu Leu Asp Asp Arg
 1 5 10 15
 Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ala Ser Ala Gly
 20 25 30
 Lys Leu Lys Arg Lys Phe Trp Trp
 35 40

<210> 69
 <211> 40
 <212> PRT
 <213> Caenorhabditis elegans

<400> 69
 Asn Lys Val Met Glu Arg Asp Val Gln Leu Asn Ser Leu Asp His Arg
 1 5 10 15
 Ala Glu Val Leu Gln Asn Gly Ala Ser Gln Phe Gln Gln Ser Ser Arg
 20 25 30
 Glu Leu Lys Arg Gln Tyr Trp Trp
 35 40

<210> 70
 <211> 40
 <212> PRT
 <213> Drosophila sp.

<400> 70
 Glu Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu Leu Gly Glu Arg
 1 5 10 15
 Ala Asp Gln Leu Glu Gly Gly Ala Ser Gln Ser Glu Gln Gln Ala Gly
 20 25 30
 Lys Leu Lys Arg Lys Gln Trp Trp

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35

40

<210> 71
<211> 40
<212> PRT
<213> Drosophila sp.

<400> 71
Glu Lys Val Leu Glu Arg Asp Ser Lys Leu Ser Glu Leu Asp Asp Arg
1 5 10 15
Ala Asp Ala Leu Gln Gln Gly Ala Ser Gln Phe Glu Gln Gln Ala Gly
20 25 30
Lys Leu Lys Arg Lys Phe Trp Leu
35 40

<210> 72
<211> 39
<212> PRT
<213> Hirudinida sp.

<400> 72
Asp Lys Val Leu Glu Lys Asp Gln Lys Leu Ala Glu Leu Asp Arg Ala
1 5 10 15
Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu Ala Ser Ala Gly Lys
20 25 30
Leu Lys Arg Lys Phe Trp Trp
35

<210> 73
<211> 18
<212> PRT
<213> Homo sapiens

<400> 73
Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys
1 5 10 15
Ala Arg

<210> 74
<211> 18
<212> PRT
<213> Bos taurus

<400> 74
Glu Arg Ala Val Ser Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys
1 5 10 15
Ala Arg

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<210> 75
 <211> 18
 <212> PRT
 <213> Rattus sp.

<400> 75
 Glu His Ala Lys Glu Glu Thr Lys Lys Ala Ile Lys Tyr Gln Ser Lys
 1 5 10 15
 Ala Arg

<210> 76
 <211> 18
 <212> PRT
 <213> Rattus sp.

<400> 76
 Glu Lys Ala Arg Asp Glu Thr Arg Lys Ala Met Lys Tyr Gln Gly Gly
 1 5 10 15
 Ala Arg

<210> 77
 <211> 18
 <212> PRT
 <213> Rattus sp.

<400> 77
 Glu Arg Gly Gln Glu His Val Lys Ile Ala Leu Glu Asn Gln Lys Lys
 1 5 10 15
 Ala Arg

<210> 78
 <211> 18
 <212> PRT
 <213> Gallus gallus

<400> 78
 Val Pro Glu Val Phe Val Thr Lys Ser Ala Val Met Tyr Gln Cys Lys
 1 5 10 15
 Ser Arg

<210> 79
 <211> 18
 <212> PRT

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<213> Strongylocentrotus purpuratus

<400> 79

Val Arg Arg Gln Asn Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys
1 5 10 15
Ala Arg

<210> 80

<211> 18

<212> PRT

<213> Aplysia sp.

<400> 80

Glu Thr Ala Lys Met Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys
1 5 10 15
Ala Arg

<210> 81

<211> 18

<212> PRT

<213> Teuthoida sp.

<400> 81

Glu Thr Ala Lys Val Asp Thr Lys Lys Ala Val Lys Tyr Gln Ser Lys
1 5 10 15
Ala Arg

<210> 82

<211> 18

<212> PRT

<213> Drosophila sp.

<400> 82

Gln Thr Ala Thr Gln Asp Thr Lys Lys Ala Leu Lys Tyr Gln Ser Lys
1 5 10 15
Ala Arg

<210> 83

<211> 18

<212> PRT

<213> Hirudinida sp.

<400> 83

Glu Thr Ala Ala Ala Asp Thr Lys Lys Ala Met Lys Tyr Gln Ser Ala
1 5 10 15

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Ala Arg

<210> 84
 <211> 5
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<400> 84
 Gly Gly Gly Gly Ser
 1 5

<210> 85
 <211> 19
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<221> MOD_RES
 <222> 1
 <223> Xaa=fluorescein-modified lysine

<221> MOD_RES
 <222> 20
 <223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
 <222> (0)...(0)
 <223> at the C-terminal

<400> 85
 Xaa Asp Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys
 1 5 10 15
 Met Leu Xaa

<210> 86
 <211> 13
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<221> MOD_RES

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<222> 1
 <223> Xaa=fluorescein-modified lysine
 <400> 86
 Xaa Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln
 1 5 10

<210> 87
 <211> 7
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic construct

<221> MOD_RES
 <222> 7
 <223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
 <222> (0)...(0)
 <223> at the C-terminal

<400> 87
 Arg Ala Thr Lys Met Leu Xaa
 1 5

<210> 88
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

<221> MOD_RES
 <222> 1
 <223> Xaa=fluorescein-modified lysine

<221> MOD_RES
 <222> 23
 <223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
 <222> (0)...(0)
 <223> at the C-terminal

<400> 88
 Xaa Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr
 1 5 10 15
 Lys Met Leu Gly Ser Gly Xaa

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20

<210> 89
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

<221> MOD_RES
 <222> 1
 <223> Xaa=fluorescein-modified lysine

<221> MOD_RES
 <222> 21
 <223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
 <222> (0)...(0)
 <223> at the C-terminal

<400> 89
 Xaa Ala Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala
 1 5 10 15
 Thr Lys Met Leu Xaa
 20

<210> 90
 <211> 24
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> synthetic peptide

<221> MOD_RES
 <222> 1
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<221> MOD_RES
 <222> 24
 <223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
 <222> (0)...(0)
 <223> at the C-terminal

<400> 90
 Xaa Ala Asp Ser Asn Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala
 1 5 10 15

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Thr Lys Met Leu Gly Ser Gly Xaa
20

<210> 91
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 1
<223> Xaa=fluorescein-modified lysine

<221> MOD_RES
<222> 16
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
<222> (0)...(0)
<223> at the C-terminal

<400> 91
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Xaa
1 5 10 15

<210> 92
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 1
<223> Xaa=fluorescein-modified lysine

<221> MOD_RES
<222> 19
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
<222> (0)...(0)
<223> at the C-terminal

<400> 92
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly
1 5 10 15
Ser Gly Xaa

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<210> 93
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 1
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<221> MOD_RES
<222> 22
<223> Xaa=tetramethylrhodamine-modified lysine

<221> AMIDATION
<222> (0)...(0)
<223> at the C-terminal

<400> 93
Xaa Met Glu Lys Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys
1 5 10 15
Met Leu Gly Ser Gly Xaa
20

<210> 94
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
<222> 1
<223> Xaa-DABCYL modified lysine

<221> MOD_RES
<222> 16
<223> Xaa=EDANS modified glutamate

<221> AMIDATION
<222> (0)...(0)
<223> at the C-terminal

<400> 94
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Xaa

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1                               5                               10                               15

<210> 95
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic peptide

<221> MOD_RES
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<223> Xaa=DABCYL modified lysine

<221> MOD_RES
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<223> Xaa=EDANS modified lysine

<221> AMIDATION
<222> (0)...(0)
<223> at the C-terminal

<400> 95
Xaa Thr Arg Ile Asp Glu Ala Asn Gln Arg Ala Thr Lys Met Leu Gly
 1             5                                10                    15
Ser Gly Xaa

<210> 96
<211> 118
<212> PRT
<213> Homo sapiens

<400> 96
Met Ser Ala Pro Ala Gln Pro Pro Ala Glu Gly Thr Glu Gly Thr Ala
 1             5                                10                    15
Pro Gly Gly Gly Pro Pro Gly Pro Pro Pro Asn Met Thr Ser Asn Arg
          20                                25                    30
Arg Leu Gln Gln Thr Gln Ala Gln Val Glu Glu Val Val Asp Ile Ile
      35                                40                    45
Arg Val Asn Val Asp Lys Val Leu Glu Arg Asp Gln Lys Leu Ser Glu
    50                                55                    60
Leu Asp Asp Arg Ala Asp Ala Leu Gln Ala Gly Ala Ser Gln Phe Glu
65              70                                75                    80
Ser Ser Ala Ala Lys Leu Lys Arg Lys Tyr Trp Trp Lys Asn Cys Lys
            85                                90                    95
Met Met Ile Met Leu Gly Ala Ile Cys Ala Ile Ile Val Val Val Ile
        100                                105                    110
Val Ile Tyr Phe Phe Thr
115
```